

REMARKS

In view of the above amendments and the following remarks, reconsideration of the outstanding office action is respectfully requested.

Claims 20 and 21 have been canceled and claims 1, 18, 22, 42, and 45 have been amended, so that claims 1, 18, 19, 22, 39-43, 45, 62-65, and 67-73 are now pending.

The rejection of claims 1, 18-22, 39-43, 45, 62-65, and 67-73 under 35 U.S.C. § 112 (1st para.) for lack of enablement is respectfully traversed in view of the above amendments and the following remarks. The U.S. Patent and Trademark Office ("USPTO") has taken the position that the specification is not enabling for the "Ananas type" and "Cornell ZPPM 339" parental plants recited in the claims. Applicant respectfully submits that this rejection is now moot in view of the deletion of the "Ananas type" parental plant from the claims. With respect to the "Cornell ZPPM 339" parental plant, the USPTO has based this rejection on its view that there is no guarantee that this plant line will be available for a period of 30 years, or five years after the last request for the plant, or for the enforceable life of any patent issuing for the present invention. Applicant has deposited the "Cornell ZPPM 339" line with the American Type Culture Collection ("ATCC") as ATCC Accession No. PTA-6635. As shown on the ATCC deposit receipt (dated April 8, 2005) (attached hereto as **Exhibit A**), the deposit of the "Cornell ZPPM 339" was made in conformity with the requirements of the Budapest Treaty. In particular, the ATCC deposit receipt states the following:

The seeds will be made available if a patent office signatory to the Budapest Treaty certifies one's right to receive, or if a U.S. Patent is issued citing the seeds and ATCC is instructed by the United States Patent & Trademark Office or the depositor to release said seeds.

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The seeds will be maintained for a period of at least 30 years from date of deposit, or five years after the most recent request for a sample, whichever is longer.

For the above reasons, applicant respectfully submits that the non-enablement rejection is improper and should be withdrawn.

The rejection of claims 1, 18-22, 39-43, 45, 62-65, and 72 under 35 U.S.C. § 112 (1st para.) for lack of an adequate written description is respectfully traversed in view of the above amendments and the following remarks.

The USPTO alleges that, because there is no proof that any of the parental plants are homozygous inbred lines, seed deposits of these lines are inadequate to describe progeny of crosses between the parent plants. Further, the USPTO points out that the Galia type and Ananas type melons are not inbred lines, but merely types of plants with diverse genotypes. Applicant respectfully disagrees with the USPTO's above bases for rejection and asserts that the claimed subject matter (as amended) is fully described in compliance with the written description requirement of 35 U.S.C. § 112 (1st para.).

The written description must be reviewed from the perspective of one of skill in the art at the time the application is filed. *Wang Labs, Inc. v. Toshiba Corp.*, 993 F.2d 858, 863 (Fed. Cir. 1993). The specification need not disclose what is well known to those skilled in the art and preferably omits what is well known and already available to the public. *In re Buchner*, 929 F.2d 660, 661 (Fed. Cir. 1991). Here, the claims of the present invention identify the non-recurrent and recurrent parent plants by name. In particular, the claims recite the non-recurrent parent plants as being PI 157082, PI 511890, PI 482399, PI 482398, and PI 140471, and the recurrent parent plants as being Cornell ZPPM 339, TAM Uvalde, UC Topmark, Galia type, and Oro Rico. As shown in the previously submitted Declaration of Margaret M. Jahn Under 37 C.F.R. § 1.132, at ¶¶6-12, dated July 8, 2004 (the "Jahn Declaration"), each of these parent plants is known as a breeding line or cultivar. The Jahn Declaration and its exhibits further show that the recited parent plants are available to the public, either commercially or through germplasm depositories. It is also well known in the relevant art of melon breeding that each of the non-recurrent and recurrent parent plants recited in the claims of the present invention are genetically distinct from one another and from other melons (i.e., melon lines or cultivars not recited in the claims). It is further well known in the relevant art that the recited parent plants are uniform and otherwise identifiable as belonging to the named line or cultivar. Thus, the recurrent and non-recurrent parent plants recited in the claims are adequately described.

The USPTO has asserted that the specification does not adequately describe the plants required for each of the steps of the claimed methods or the plants produced by the methods by genomic structure or by phenotypic characteristics. To fulfill the written description requirement, it must be shown that applicant was in possession of the claimed

invention. *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 1563-1564 (Fed. Cir. 1991). For the skilled artisan to recognize that applicant was in possession of the claimed invention at the time of filing, applicant asserts that it is sufficient that the recited non-recurrent and recurrent parent plants are identified in the specification by name. Thus, applicant asserts that describing the “intermediate” plants obtained or used in the claimed methods by genomic structure or phenotypic characteristics is not necessary to show the skilled artisan that applicant was in possession of the claimed invention.

For the reasons discussed above, applicant respectfully submits that the rejection based on inadequate written descriptive support is improper and should be withdrawn.

The rejection of claims 1, 18-22, 39-43, 45, and 62-65 under 35 U.S.C. § 112 (2nd para.) for indefiniteness is rendered moot with respect to canceled claims 20 and 21, and is respectfully traversed with respect to the remaining rejected claims in view of the above amendments and the following remarks.

Claims 1, 18, 22, 42, and 45 have been amended to address the issues raised by the USPTO at page 6 of the outstanding Office Action (mailed September 21, 2004). The amendments to claims 18 and 42 comport with the suggested remedies indicated by the USPTO. Regarding the rejection of claims 1, 22, and 45, the USPTO has indicated that, because the term “enhanced” is not defined in the claims, one of ordinary skill in the art would not be reasonably apprised of the metes and bounds of the claimed invention. Claims 1, 22, and 45 have been amended to replace the term “enhanced” with the term “increased,” and to clarify that the “commercially appealing attributes” are increased relative to the “non-recurrent parent plant.” Applicant submits that these amendments are supported by the specification (particularly at page 5, line 29 to page 6, line 2, and page 10, line 32 to page 14, line 20), and that the skilled artisan would clearly understand from reading the specification that “enhanced” is synonymous to “increased” when used to describe the commercially appealing attributes, and that such attributes are relative to the non-recurrent parent plants.

For the reasons discussed above, applicant respectfully submits that the indefiniteness rejection is improper and should be withdrawn.

The rejection of claims 18-20 under 35 U.S.C. § 102(b) as anticipated by Prasad et al., “Inheritance of Resistance to *Mycosphaerella citrullina* in Muskmelon,” *J. Amer. Soc. Hort. Sci.* 91:396-400 (1967) (“Prasad”) is rendered moot with respect to canceled claim 20, and respectfully traversed with respect to claims 18 and 19. Prasad teaches crossing PI 140471 (resistant) with muskmelon of varying degrees of resistance to the gummy stem blight pathogen, i.e., *Mycosphaerella citrullina*. In particular, as noted in the Office Action (at pages 6-7), Prasad describes crossing PI 140471 (highly resistant) with the following muskmelons: Honey Dew #2 (HD-2) (slightly susceptible); Hales Best Jumbo (HBJ) (moderately tolerant); Smiths Perfect (SP) (susceptible); the C#8 breeding line (C-8) (moderately resistant); the AMS-4 breeding line (A-4) (moderately tolerant); and the C#1 breeding line (C-1) (moderately resistant). However, nowhere does Prasad teach or suggest crossing PI 140471 with any of the recurrent or non-recurrent parent plants recited in the method of claim 1, which method is used (directly or indirectly) to produce the *Cucumis melo* hybrid seeds or plants recited in the methods of claims 18 and 19. Thus, applicant respectfully submits that the lack of novelty rejection based on Prasad is improper and should be withdrawn.

The rejection of claims 1 and 18-20 under 35 U.S.C. § 103(a) for obviousness over Prasad or Norton et al., “AC-70-154, A Gummy Stem Blight-Resistant Muskmelon Breeding Line,” *HortScience* 24(4):704-711 (1989) (“Norton”) in view of each of Kalb et al., “Evaluation of Combining Ability, Heterosis, and Genetic Variance for Fruit Quality Characteristics in Bush Muskmelon,” *J. Amer. Soc. Hort. Sci.* 109(3):411-415 (1984) (“Kalb”) and Zhang et al., “Screening Melon (*Cucumis melo*) for Resistance to Gummy Stem Blight in the Greenhouse and Field,” *HortScience* 32(1):117-121 (1997) (“Zhang”) is respectfully traversed.

Prasad is discussed above. Norton is cited as teaching the cross of PI 140471 x Georgia 47 (non-resistant). Kalb is cited as teaching the fruit quality characteristics of UC Topmark and other melon varieties. Zhang is cited as teaching gummy stem blight resistance of various melon varieties, including PI 140471, PI 157082, PI 511890, PI 482398, and PI 482399. The USPTO has taken the view that it would have been obvious to combine the cited references to teach the claimed method of producing gummy stem blight resistant melons.

A proper *prima facie* showing of obviousness requires the USPTO to satisfy three requirements. First, the prior art relied upon, coupled with knowledge generally available to one of ordinary skill in the art, must contain some suggestion which would have motivated the skilled artisan to combine or modify references. *See In re Fine*, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). Second, the USPTO must show that, at the time the invention was made, the proposed modification had a reasonable expectation of success. *See Amgen v. Chugai Pharm. Co.*, 927 F.2d 1200, 1209, 18 USPQ2d 1016, 1023 (Fed. Cir. 1991). Finally, the combination of references must teach or suggest each and every limitation of the claimed invention. *See In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

Application of these standards to the present invention demonstrates that the USPTO has failed to establish a *prima facie* case of obviousness for several reasons. In particular, applicant respectfully submits that the USPTO has failed to meet its burden of showing that, at the time of the invention, combining the cited references would have been reasonably likely to succeed in making the *Cucumis melo* hybrid plants/seeds produced according to the methods of rejected claims.

Claims 1, 18, and 19 are limited in terms of the recurrent and non-recurrent parents used to produce the plants/seeds of the claimed methods. Although Prasad and Norton describe crossing specific types of gummy stem blight resistant and non-resistant plants, these references, alone or in combination, do not teach crossing the recurrent (non-resistant) and non-recurrent (resistant) plants recited in the claims of the present invention. Thus, to compensate for the deficiencies of Prasad and Norton, the USPTO has relied on Zhang and Kalb. In responding to applicant's previous arguments against this ground for rejection, the USPTO asserted that "one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references" (Office Action, at page 10, citing *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981) and *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986)). The USPTO has also asserted that "Norton's success in producing a resistant plant using PI 140471 and one commercially appealing recurrent parent provides motivation and reasonable basis for success that other resistant plants could be produced using PI 140471 and another commercially appealing recurrent parent" (Office Action, pages 10-11). The USPTO's rationale is flawed, because it calls for an improper "obvious to try" approach. *See Manual of Patent Examining Procedure ("MPEP")* § 2145, at 2100-168 (Rev. 3, August 2005).

Applicant respectfully submits that the USPTO has either ignored or misinterpreted applicant's prior arguments and evidence presented against the combination of the cited references. For example, in support of its previous response, applicant submitted the Jahn Declaration, which stated the following regarding the cited references:

In particular, nowhere does *Prasad, Norton, Kalb, Zhang*, or Trulson, alone or *in combination*, teach crossing the recurrent and non-recurrent parent plants described in [the] present application in order to yield the gummy stem blight resistant *Cucumis melo* hybrid seeds or plants of [the] present application.

(at ¶13) (emphasis added). Thus, applicant has based its arguments on just an attack of "individual" references. Instead, there is evidence of record that states that the combination of Prasad, Norton, Kalb, and Zhang does not teach the crosses of the recurrent and non-recurrent parent plants of the present invention (*see* Jahn Declaration ¶13).

For the reasons discussed above, applicant respectfully submits that the obviousness rejection of claims 1 and 18-20 is improper and should be withdrawn.

The rejection of claim 21 under 35 U.S.C. § 103(a) for obviousness over Prasad or Norton in view of Kalb, Zhang, and Trulson et al., "*In vitro* Plant Regeneration in the Genus *Cucumis*," Plant Science 47:35-43 (1986) ("Trulson") is respectfully traversed in view of the cancellation of claim 21.

The rejection of claims 22, 39-43, 45, 62-65, and 67-73 under 35 U.S.C. § 102(b) as anticipated by or under 35 U.S.C. § 103 as obvious over Prasad is respectfully traversed. The USPTO has taken the view that the claimed plants/seeds *appear* to be identical to those of Prasad. In particular, the USPTO makes the argument that the claimed plants/seeds and those of Prasad *appear* to be identical, because both sets of plants/seeds are resistant to gummy stem blight *and* have enhanced disease tolerance. The USPTO further argues that, even if the plants/seeds are not identical, any differences would be due to "minor morphological variation" and would not confer a patentable distinction.

Claims 22 and 45 have been amended to recite that the hybrid seeds/plants produced by the claimed methods contain "at least one gummy stem blight resistance gene selected from the group consisting of *Gsb1*, *Gsb2*, *gsb3*, *Gsb4*, and *Gsb5*." Descriptive support for these amendments are found in the specification at page 9, line 31 to page 10, line 26, and in original claims 29, 30, 52, and 53. With respect to the 35 U.S.C. § 102(b) rejection

(as applied to claims 22, 39-43, 45, 62-65), applicant asserts that Prasad is deficient as anticipatory art, because it does not teach crossing PI 140471 with any of the recurrent parent plants recited in the claims. Further, regarding claims 67-73, applicant points to the pedigree of the recited NY 01-190-3R, -7L, -9L (composite) breeding line is genetically distinguishable from the hybrids described in Prasad. See Jahn Declaration ¶12. Regarding the 35 U.S.C. § 103 rejection, applicant asserts that Prasad neither teaches nor suggests that crossing PI 140471 with any of the recurrent parent plants recited in the present claims would be reasonably likely to succeed in yielding the *Cucumis melo* hybrid seeds or plants of the present invention. Further, Prasad is limited in that it teaches crossing only two types of non-resistant parent plants with PI 140471, namely, the HD-2 breeding line (slightly susceptible) and SP (susceptible). Thus, applicant respectfully submits that, *inter alia*, this obviousness rejection is improper as relying on an “obvious to try” rationale. See MPEP § 2145, at 2100-168 (Rev. 3, August 2005).

For the reasons discussed above, applicant asserts that the anticipation and obviousness rejections of claims 22, 39-43, 45, 62-65, and 67-73 based on Prasad are improper and should be withdrawn.

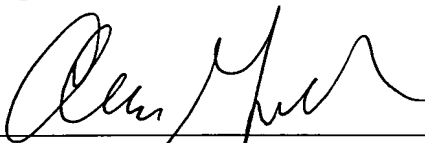
The rejection of claims 22, 39-43, 45, 62-65, and 67-73 under 35 U.S.C. § 102(b) as anticipated by or under 35 U.S.C. § 103 as obvious over Norton is respectfully traversed. The USPTO has taken the position that the AC-70-154 melon described in Norton *appears* to be identical the claimed plants/seeds of the present invention. The USPTO’s rationale is that the claimed plants/seeds and the AC-70-154 melon share gummy stem blight resistance and enhanced disease tolerance. The USPTO further asserts that, even if AC-70-154 is not identical to the claimed plants/seeds, it *appears* that the differences are only due to minor morphological variations that do not confer a patentable distinction to the claimed plants. Applicant respectfully disagrees. Norton is limited in that it only teaches crossing PI 140471 (resistant) with Georgia 47 (non-resistant). Further, Norton teaches that Georgia 47 is used for backcrossing in order to yield the AC-70-154 breeding line. Thus, the genetic profile of the AC-70-154 breeding line necessarily includes that of Georgia 47 as the genetic background. The claims of the present invention do not recite using Georgia 47 as a non-resistant, recurrent parent plant. Thus, Norton cannot be used to support an anticipation rejection. Further, nowhere does Norton teach or suggest that crossing PI 140471 with the recurrent (non-resistant) parent plants recited in the present claims would be reasonably likely

to yield the gummy stem blight resistant hybrids plants/seeds of the present invention. For these reasons, applicant respectfully submits that the anticipation and obviousness rejections based on Norton are improper and should be withdrawn.

In view of all of the foregoing, applicant submits that this case is in condition for allowance and such allowance is earnestly solicited.

Respectfully submitted,

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